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Evaluation of the Unconventional Monetary Policy: Evidence from the EU and the US

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ABSTRACT

The monetary response to the 2008 financial crisis was unprecedented. The US Federal Reserve and the European Central Bank (ECB) tried to counter, unsuccessfully, the deflationary forces in their economies throw the regular instruments. Therefore, the ECB and the Fed started to experiment with unconventional policies as they started to purchase a large amount of privet and governments assets of different maturities. That process, which is commonly referred to as quantitative easing (QE), is the focus of this paper. The paper evaluates those policies' impact on the interest, inflation, unemployment rates and inequality. The paper also examines the effects of those Central Banks policies on the redistribution of risks from southern Europe (e.g. Greece) to the northern ones (e.g. Germany).

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1. Introduction

Conventional economic wisdom is hard to be defined, as the global fundamental economic force changes and our understanding evolve with it. Economic history is full of examples in which unconventional methods saved the global economy. During the create depression, the conventional wisdom of budget balances hurt the global economy, not until the rise of Keynesianism the global economy has overcome the deep economic crisis. When the Keynesianism failed to deal 1970-faced stagflation, Milton Friedman's theories tackled inflation. The financial crisis of 2008 showed us again that when economic reality changes and conventional wisdom fails, policy makers have to think beyond the prevailing conventional wisdom. During 2008 Great Recession, theories like automatic correction of the market failed to deal with the deteriorating global economic situation. Yet again policymakers had to come up with the unconventional way to avoid the collapse of the financial system and to avoid another depression

The monetary and physical response to the crisis was unprecedented. Central Banks (CB) tried to inject liquidity to the mark through the normal open market operation and with the main overnight refinancing interest rates reached zero. The normal open market operation did translate to neither more liquid to private investor nor reduction in interest rate. With the collapse of the inter-banking lending channels and the impairment of normal channels of transmitting monetary policy, central banks had to think of new way to implement their policies. They started using unconventional monetary policy (Constâncio, 2015a).

Chapter Two will give theoretical and empirical background information in how the unconventional monetary transmits its policy to the economy. Chapter Three, briefly evaluates the impact of quantitative easing on the interest, inflation, and unemployment rates. Chapter Four, assess and analyses the effects of the unconventional monetary policy distribution impact of income, wealth and risks.

2. Background of Study

In 2001, Bank of Japan was the first to use the unconventional monetary policy to escape deflation and stimulate economic growth. Only after the 2008 economic crisis, the rest of the developed economies followed suit in adopting that approach as the U.S Federal Reserve, Bank of England and the ECB adopting their own version of quantitative easing. The common objective of all those Central banks was to restore the targeted inflation rate, preventing the collapse of the financial system and fighting a recession (Nayak, 2013).

As the key interest rates in developed countries reached its lower bound, CB started to use several asset purchasing programs (commonly referred to as QE) to inject liquidity directly into the market and assume a more involved intermediation role. Quantitative easing targets specific security to reach its objectives. Central banks purchase asset-backed securities (ABS), public and the private bonds. The assets purchase programs allowed CBs to control new several transmission channels to stabilize prices, reduce interest rates, increase lending and spending (Constâncio, 2015a).

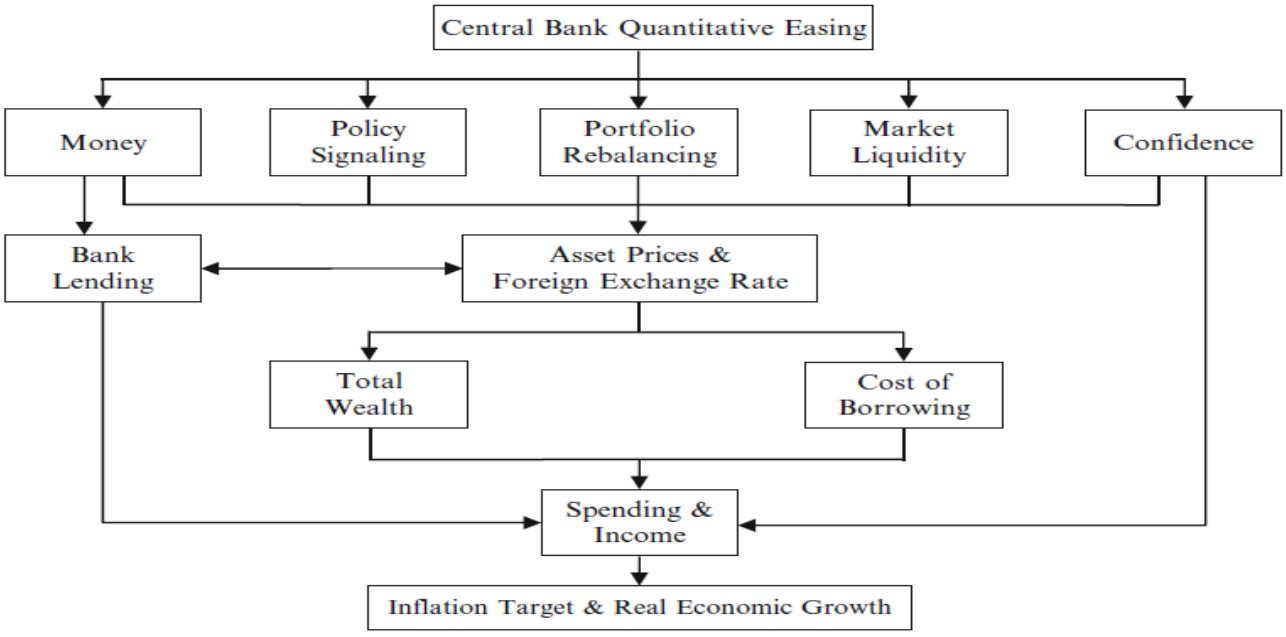


Figure 1
Transmission channels of QE (Hausken, Ncube 2013)

Several empirical and theoretical studies have identified some channels through which quantitative easing affects the economy, some of which are generalized in Figure 1. The figures indicate that central banks use a number of potential channels through which quantitative easing can influence interest rates and liquidity which in turn changes banks lending, consumer spending, and companies' investments Behaviour. This ultimately affects inflation levels and economic growth (Constâncio 2015a).

One of the channels could be described as a ***Money Channel***, in which central banks increases the supply of money to banks by improving the banking sector liquidity. It encourages them to give more new loans than they would have done without the credit easing. However, this conventional channel proved to be to, to a large extent, impaired during the financial crisis in which many banks choose to hold the high-powered money, Rather than passing the liquidity into the real economy (Hausken, Ncube, 2013).

The second is the ***Signalling Channel***. By purchasing large scale assets of different maturities, central banks affects the future expected inflation and the likely path of key interest rates. By announcement of Central banks plans of large-scale asset purchases, it provides the market with information about the potential future interest rates and policies Interventions. Hence, the name signalling channels. The signalling channel, in that way, is expected to affect yield curves of different bond maturities (Constâncio 2015a).

Another effect of the central bank purchasing many assets in the secondary market, Is its ***Portfolios Rebalancing Effect*** and the improvement of market liquidity. Central banks purchases affect the relative supply of assets, like Mortgage-backed securities and covered governments bonds. By doing so, Asset prices increases and their yield to maturity change. That may make the assets sellers rebalance their portfolio by buying other assets, which are a close substitute to the one they sold. Therefore, quantitative easing increases the prices of the assets purchased and their close substitutes. By doing this process for the long-term securities, Central banks lower the premium of liquidity. By increasing securities prices, the wealth of asset holders' increases and their cost of borrowing simultaneously reduced. By affecting the wealth and borrowing potential of public investors, Central bank policies are expected to increase spending of private invested which results in the achievement of the inflation target reduce the unemployment rate and stimulate economic growth (Hausken, Ncube, 2013).

As the unconventional monetary policies promote the expectation of an improvement in the economic outlook, it gives a broader ***confidence effect*** to all segments of the society. By increasing the confidence level, encourage private investors to spend more and increase their investments (Hausken, Ncube, 2013).

3. Evaluation of the Unconventional Monetary Policy

This chapter evaluate the effect of the unconventional monetary policy on interest rates, inflation rates and unemployment levels.

A. Interest Rates

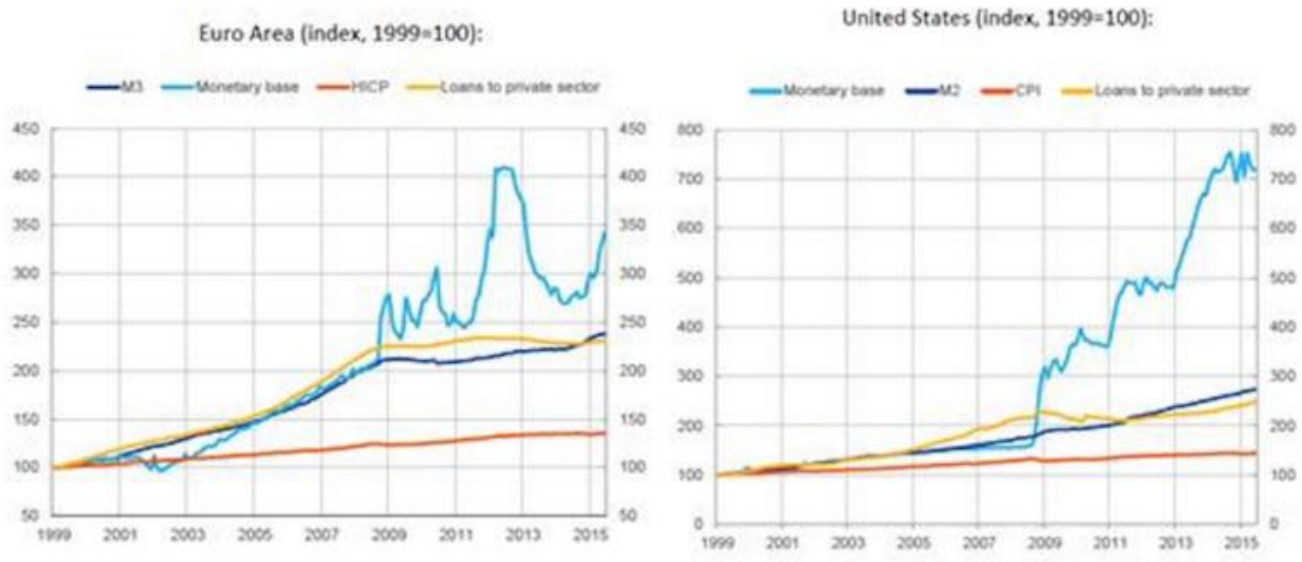


Figure 2
Euro area and US monetary bases (light blue) and loans to private sector (Constâncio 2015a)

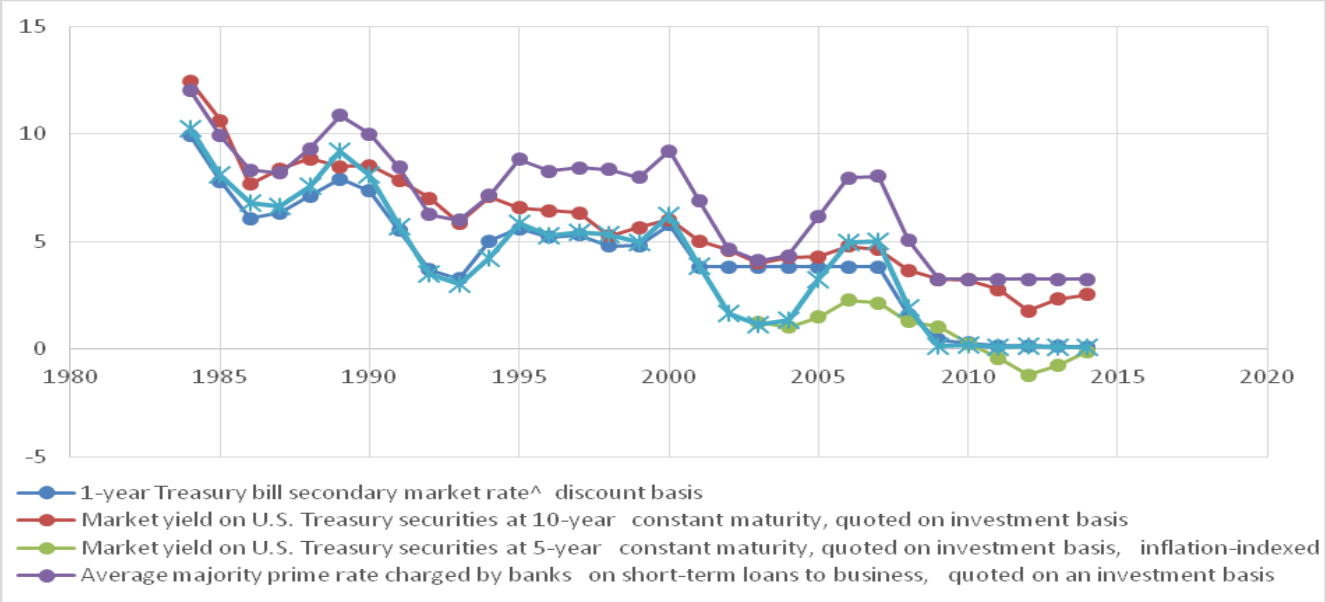


Figure 3
Federal Reserve (Board of Governors of the Federal Reserve System, 2015a)

Recent data Represented in figures 2 and 3, from the US and the euro area, indicates that the expansionary monetary policy and reduction in main refinancing interest rate did not translate to a more loans to the private sector. That may imply that the traditional channels of conducting an expansionary monetary policy are impaired, as liquidity does not reach its final intended destination. As figure 3 indicates that interest rates in the US, charged by the banks to businesses, was not affected by the expansionary monetary policy. Central banks searched for an alternative ways to reduce interest rates, stimulate the economy and maintain price stability. That is why central banks started to use the unconventional monetary policy (Constâncio, 2015a).

Table 1
The Impact of quantitative easing on interest rates (Hausken, Ncube, 2013)

Economy	Cumulative change	1-year	2-year	3-year	5-year	7-year	10-year	20-year	25/30-year
US	ΣΔ(US Treasury yield)	−36	−65	−74	−129	−161	−171	−124	−106
	ΣΔ(OIS rate)	−31	−58	−86	−132	−161	−163	−118	−112
	Δ(Yield-OIS spread)	−5	−7	12	3	0	−8	−6	6
UK	ΣΔ(UK gilt yield)	−30	−53	−68	−90	−96	−92	−107	−116
	ΣΔ(OIS rate)	−13	−29	−29	−20	−18	−16	−12	−10
	ΣΔ(Yield-OIS spread)	−17	−24	−39	−70	−78	−76	−95	−106
Japan	ΣΔ(JGB yield)	−13	−14	−16	−26	−18	−29	−41	−50
	ΣΔ(JGB yield) since October 2009	−3	−9	−5	−18	−10	−25	−41	−48
	ΣΔ(OIS rate) since October 2009	−5	−11	−5	−26	−19	−24	−41	−31
	ΣΔ(Yield-OIS spread) since October 2009	2	3	0	8	9	−1	−1	−17
Euro area	ΣΔ(EAGB yield)	−9	−14	−17	−11	3	24	66	97
	ΣΔ(EAGB yield) since October 2008	−10	−16	−18	−12	3	25	70	102
	ΣΔ(OIS rate) since October 2008	11	28	44	53	67	75	91	87
	ΣΔ(Yield-OIS spread) since October 2008	−21	−43	−63	−65	−64	−50	−21	14

Notes: All changes are measured in basis points. Cumulative changes may differ from the sum of changes reported for individual events because of rounding

Several studies tried to estimate the impact of quantitative easing on interest rates and bond yields. It is important to highlight that quantitative easing is not similar across different central banks. The Federal Reserve and Bank of England primary concentrated on bond purchases while the ECB and Bank of Japan Conducts its open market operations mainly through the banking sector That is why the bond markets interest rate behaviour is much more important in the US and the UK rather than in Japan and Europe (Hausken, Ncube, 2013).

Several empirical studies examined the effect of the large-scale assets purchases policy (QE) on government bond yields and key interest rates like Overnight indexed swap (OIS). Table 1, summarizes the results of an event study Conducted to assess the impact of the unconventional monetary policy on government yields for several countries, which they are namely The US, the UK, Japan and the Euro Area Government Bond yields (EAGB). The study used the time between January 2008 and December 2012 to conduct their estimations. The study indicates that the quantitative easing program in the euro area reduces the short-term Euro area Government bonds EAGB yields for short maturity bonds, however, increased yield for the longer maturities significantly. In general, the data indicate that the ECB Unconventional policies were ineffective to reduce government bond yields. That phenomenon, which was unique to the euro area QE program, may indicate that the transmission mechanism of Central bank's monetary policy is impaired by the Euro area debt crisis (Hausken, Ncube, 2013).

A key criticism for QE, especially in the Euro Area, for the purchases of government's bounds, is moral hazards. Several observers' fear that by decreasing the cost of borrowing for governments, that in turn would reduces their incentive to make a much necessary structural reforms to reduce their debt and becomes more competitive (Cour-Thimann, 2013).

B. Inflation and Unemployment

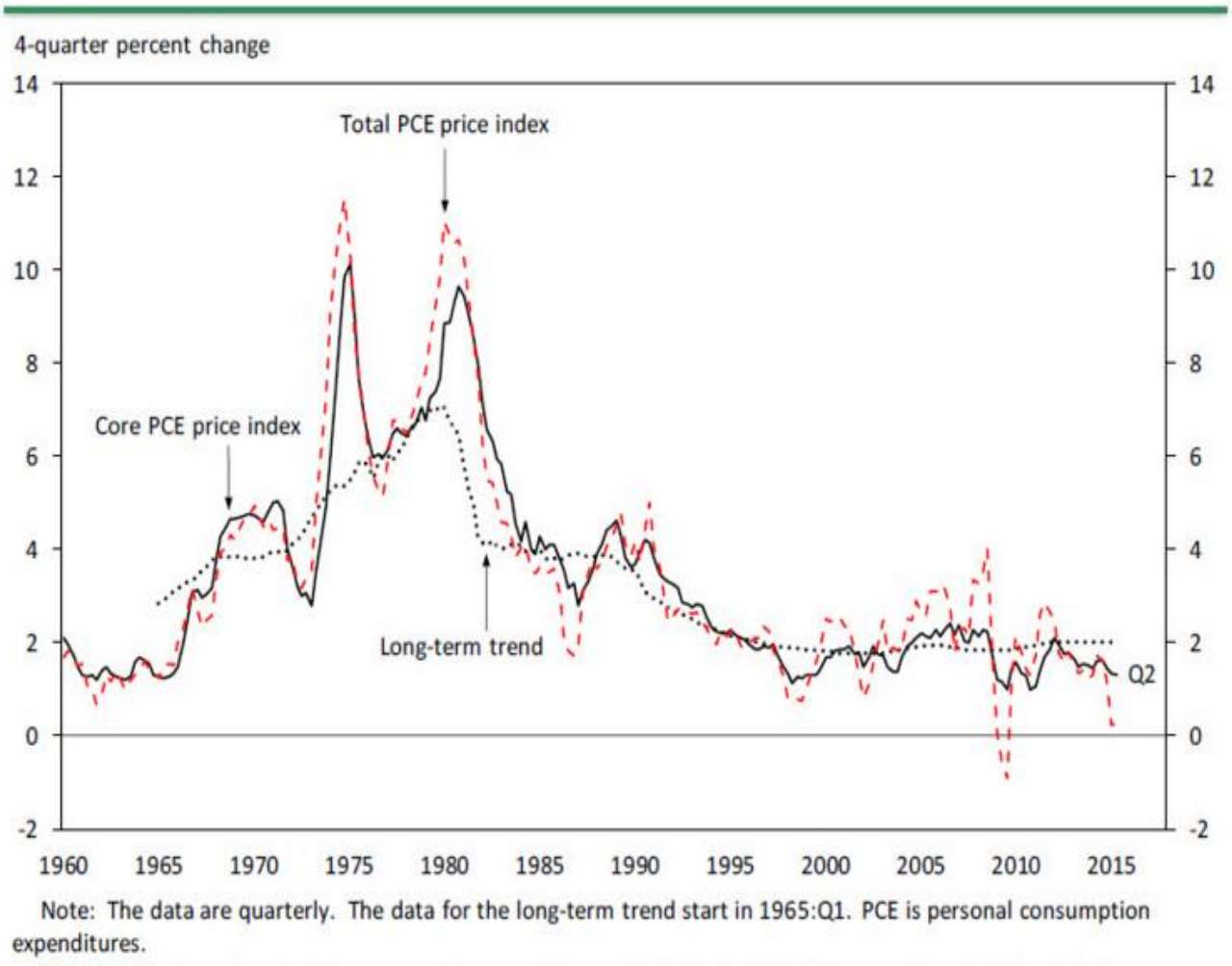


Figure 4
US Inflation since the 1960s (Board of Governors of the Federal Reserve System, 2015b)

Figure 5
Inflation in the Euro area, All-items excluding energy. (ECB, 2015)

The empirical analysis implies that, in the last two decades, long run inflation is much more accurately predicted than the short run year-to-year basis. Data in figure 4 implies that long-term inflation expectation worked as an anchor for the actual rate. Currently, the Federal Reserve, Bank of Japan, Bank of England and the ECB estimates that the optimal inflation rate for the economy, in the long run, is around 2% which is also based on the last 20-year inflation data. Figure 4 and 5, clearly indicate that the US and the Euro area core inflation, inflation excluding energy and food; fluctuate around the estimated long-term trend. Those facts represent a shift from the classical inflation prediction models. Since the beginning of the crisis and the use of quantitative easing, it was predicted that as the monetary basis expands, intermediate inflation would sharply increase. As indicated by Figure 2, 4 and 5, the increase in monetary basis was not associated with increase inflation. Moreover, the long-term inflation expectation is still around 2% in the US and the euro area (Yellen, 2015).

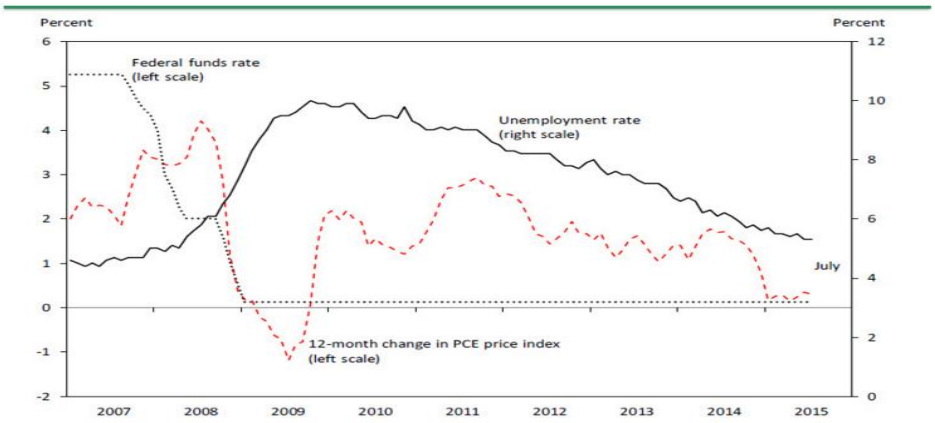


Figure 6

Unemployment, Inflation and the Federal Fund Rate (Board of Governors of the Federal Reserve System, 2015c)

In conducting monetary operations, the Federal Reserve follows the dual mandate of prices stability and full employment. While the ECB only focuses on price stability. Phillips curve was usually used in order to forecast inflation. However, various recent theoretical and empirical Evidence are not consistent with Phillips curve Approach predictions. As shown in Figure 6, data from the US indicates that the reduction of the unemployment rate was not associated with an increased level of inflation. That shows as a limitation of the monetary policy to increase labor demand and reduce unemployment (Constâncio, 2015a). Moreover, the recent inflation data contradicts with the classical theory of Milton Friedman claims that "*inflation is always and everywhere a monetary phenomenon in the sense that it is and can be produced only by a more rapid increase in the quantity of money than in output*" (Friedman, 1997, p. 11).

Recent data from the euro area still indicates that Phillips curve still slightly relevant, however, its prediction powers significantly reduced. That may be due to real wages reduction. Data from the European Commission indicates that the real unit labor costs in countries like Germany and Spain since 2001 is steadily being reduced. As figure 7 shows that the US worker productivity increased over the time, however, their wages did not increase with that trend. As capital owners benefited the most from the productivity improvement in the opposite of workers, Income is increasingly going to the assets owners at the expense of worker share of income. That leads to a decrease in the labor inflationary power (Economic Policy Institute, 2015).

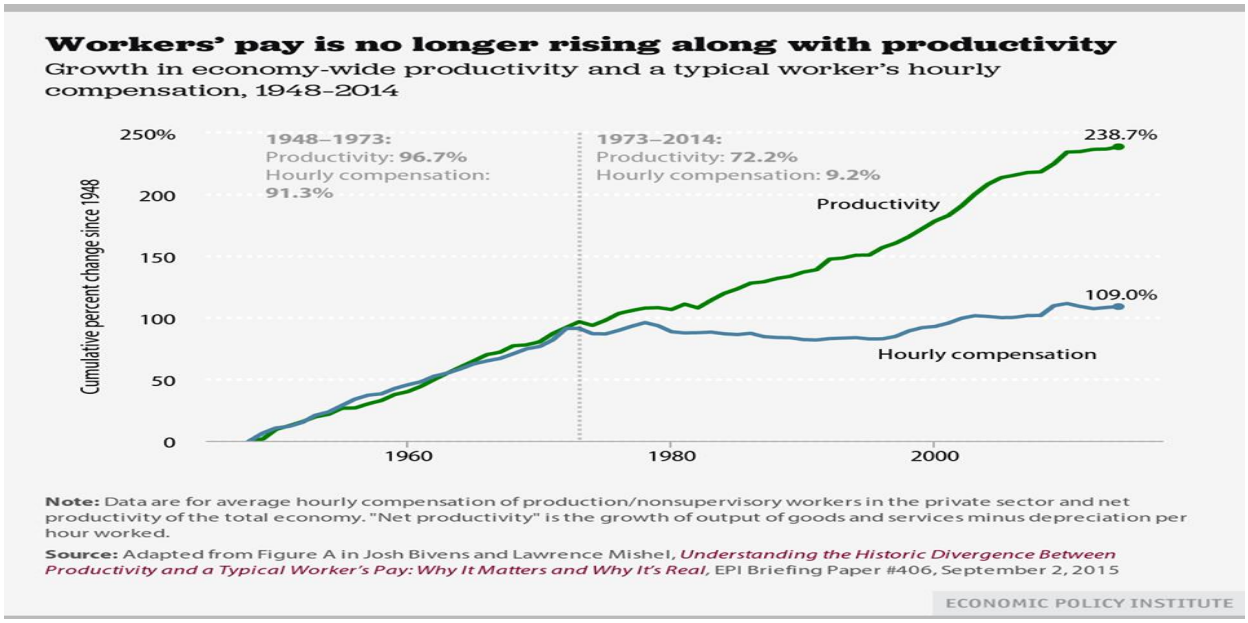


Figure 7
Worker's pay and productivity (Economic Policy Institute, 2015)

Temporary basic income could serve as a solution to the deflationary pressers that developed economy currently encounters. From data discussed in this chapter indicate, Central Banks attempts to raise inflation by giving liquidity to the banks, large corporations and asset holders, had only a moderate effect on inflation, therefore, the idea of basic income should be considered. Basic income concept, introduced in the 1920, states that governments give its' citizens a sum of money without any obligation from their part to augment their income. The idea is currently experimented with in some rich counties like Finland (The Economist, 2016). In the contest of deflationary concerns, the Central Banks, temporarily, print out money and handed it directly to its citizens to reach the inflation target. That idea is discussed in financial news under the term "Helicopter Money" (Nathan, 2016). This idea, to contrary of the current quantitative easing, would not increase inequality in the society.

C. Counterfactual Evaluation

Ideally, in order to evaluate defect of quantitative easing on the real economy we should compare the difference between current situation, with quantitative easing and the situation without it. However, counterfactual estimation in this particular case could result and I highly inconclusive data due to lack of sufficiently reliable comparable parameters. However, such a study could give us some insights (Constâncio, 2015b).

A counterfactual empirical study done by. Hausken and Ncube (2013), attempted to estimate the effect of unconventional monetary policy used by the Federal Reserve, Bank of England, Bank of Japan and European central bank, on inflation, unemployment, and economic growth. The study estimates that without the unconventional monetary policy, there would have been a lower inflation expectation, high unemployment and a decline in industrial production. Meanwhile, in the euro area, the study estimates that the unconventional monetary policy saved the area from a strong deflationary force that could have been negative. However, QE increased the long-term government bonds yields. That could be because of the-the euro area debt crisis.

4. Redistribution Effects of Quantitative Easing

The CBs unconventional monetary policy can be criticized for having a larger distribution impact on income, wealth, and risks. The first part will deal with its effects on income and wealth. The second part would deal with its distributional effects of risk among the Euro system member countries (Nayak, 2013)

A. Increase in Income and Wealth Inequality

One of the criticisms of quantitative easing is its effects on wealth distribution. The unconventional monetary policies rearrange the inequality of income and wealth for the benefit of the most advantageous segment of the society. Quantitative easing affects the structures of the prices of assets, and hence, it has a wealth effect. The lower income households and the unemployed, lacking assets, are excluded from the wealth effect created by the ECB. As a result, ECBs unconventional policies increase inequality. It is also being criticized for its unfairness from a social justice point of view, as the policy aim to help the advantaged segment of the society as a means of helping the disadvantaged (Watkins, 2014).

There are several transmission mechanisms that quantitative easing works to increase inequality. First, as asset prices increase, Asset holders after realizing the capital gains start to increase their consumption, which increases their wealth. Second, by reducing interest rates CBs hurts savers and redistribute wealth between from savers to debtors (Constâncio, 2015a). Quantitative easing has inequality in opportunities effects. By inflating assets prices, the central banks went from rescuing the financial sector to empowering it (Watkins, 2014).

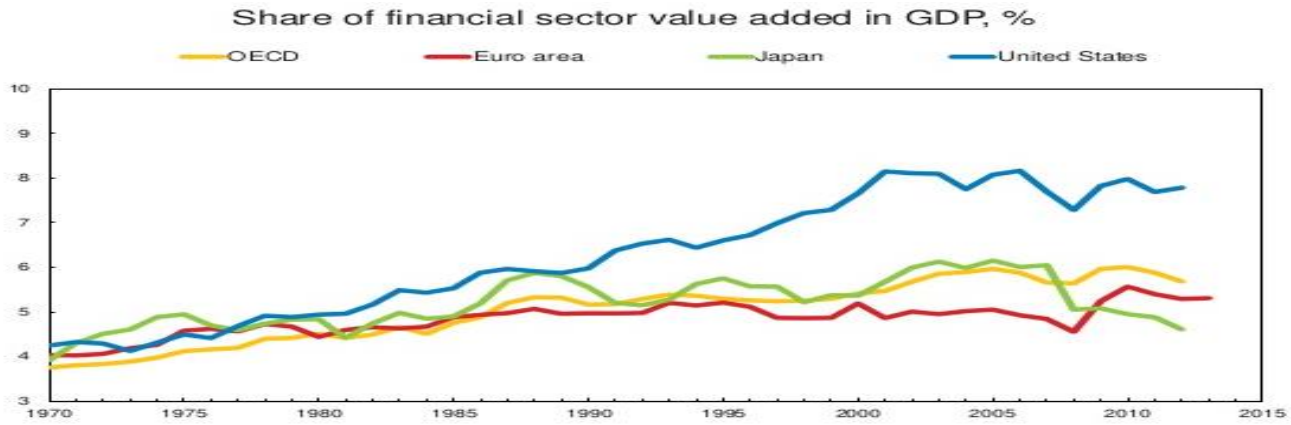


Figure 8
Share of financial value added in GDP in Percent (Mann, 2015)

As shown in Figures 8, profits of the financial institutions in the EU and the US as a percentage of GDP has reached record levels. Many attribute that expansion to the unconventional monetary policy, as it offers premium profits and security to the financial sector that are not present in any other sectors of the economy. The data indicates that the financial sector in the past half of a century has grown at a three times faster rate than the economic activity. According to the OECD chief economist, Mann, Catherine, if the financial industry continues to grow further the expansion would raise inequality and reduce the long-term growth (Mann, 2015).

(Watkins, 2014) concludes from the 2010 survey of US consumer finances, that those in the upper-income quintiles in the US benefited the most from Fed credit easing policy. The survey indicates that during the crisis, all-household net worth declined; however, from 2008 until 2010 the upper-income brackets gained the most by generating a greater share of wealth. The most recent Federal Reserve Consumer finances survey also indicate that the top 3% Share of Wealth Jump from 51.8% in 2008 -to a historical high of 54.4% in 2013. At the same time, the share of wealth held by the button 90% reached a record low of 24.7% in 2013 (Bricker et al, 2014).

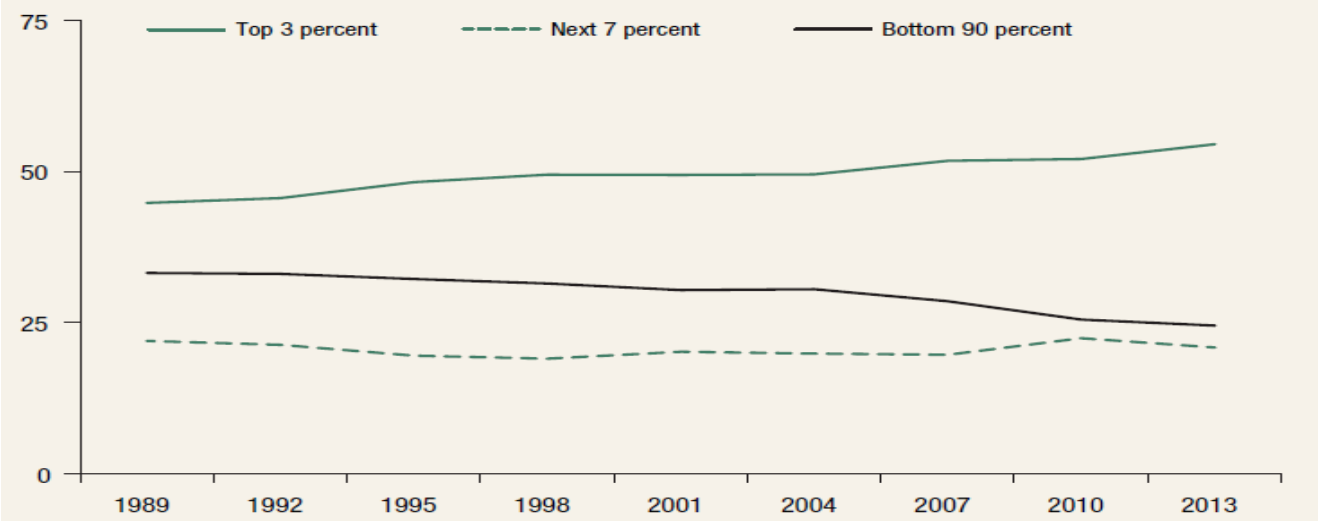


Figure 9
US Wealth shares by wealth percentile, 1989–2013 surveys (Bricker et al., 2014)

Figure 9 shows the trend of wealth share distribution in the US between the top 3% and the bottom 90% from 1989 until 2013 (Watkins, 2014). Even though economic Indicators significantly improved in 2013 from 2008, Household at the bottom income quintiles Average real median income show a substantial decline in the same time (Bricker et al., 2014).

It could be concluded that policy of quantitative easing gives unequal opportunities for different sectors in the economy as QE Provide the financial institutions security that is not enjoyed by any other industry or labor. Furthermore, the rules in which QE operates mainly benefit the asset holders segments in the society (Watkins, 2014).

The vice president of the European Central Bank recently Acknowledged that increased inequality is one of the risks and shortcomings of unconventional policies, however, he also indicated that the stronger economy and lower unemployment, that such policies create, limit those side effect on the EU (Constâncio, 2015a).

B. Redistribution of Risk

The unconventional monetary policy has redistribution effects among currency unions' members. The policy has a special mechanism in which it distributes wealth and risk among currency union members. The policies shift risks from private individuals and institutes to the public. The debate about the distributive effect of the monetary policy started as early as

1912. Since the 2008 financial crisis, the debate about it has been increased. In the euro area, there is the perception that the ECB's policies since the start of the crisis affected different countries asymmetrically, which ultimately had a cross-country redistribution effect. Several policymakers have the perception that the ECB created a transfer union from countries like Germany to the peripheral countries like Greece (Nayak, 2013). [1]

During the 2008 crisis, ECB monetary policy actively redistributed risks and liabilities across the euro area system member countries. Some countries like Portugal experience net outflow while other countries accumulated large sums of target claims (like Germany) .With the impairment of the interbank market, solvent banks faced the risk of becoming insolvent. The ECB intervened by accepting collateral from troubled countries banks and provided them with liquidity. Because of the increased intermediation role Of the ECB, liquidity distribution between the Euro systems members became highly uneven.

Figure 10 shows that countries like Spain Italy Ireland Greece ended up receiving approximately 80% of that extra liquidity. With a continuous flow of money from peripheral countries to core countries, Target balance for Germany became highly positive and for Greece became high Negative. That process implies transfer of risk from private individual or cooperation, mainly the financial institution, to the Euro system. By shifting risks and injecting liquidity in an uneven method, the ECB redistributed liability and wealth. Because of that, some argue that the system of target balances act as a *hidden bailout for countries with large target liability* and increased risks for a country that accumulated large Target claims. Figure 11 shows the central bank's target clams and target liabilities. It shows that, as that is ECB conduct it is an even expansionary monetary policy, it indirectly inflated the target balances in the euro zone. Because of the large supply of central bank money, funds continued to flow from troubled economies to more secure ones and liabilities in the troubled countries continue to move from private institutions to the ECB balance sheet. In the case of a Greek exist from the Euro zone, and default on its debt, it unclear how much target claims countries would have write off. The ECB unconventional policy actively redistribute risks among the currency union members.

In order to investigate and clarify those points, a brief introduction about the euro Payment system (target)(Trans-European automated real gross settlement Express transfer system). When an individual makes and International transfer of funds from one country to another in the same currency union, e.g. From Greece to Germany, the Bundesbank Target increase (target claims) while the Creek central bank target decrease (Target liability).

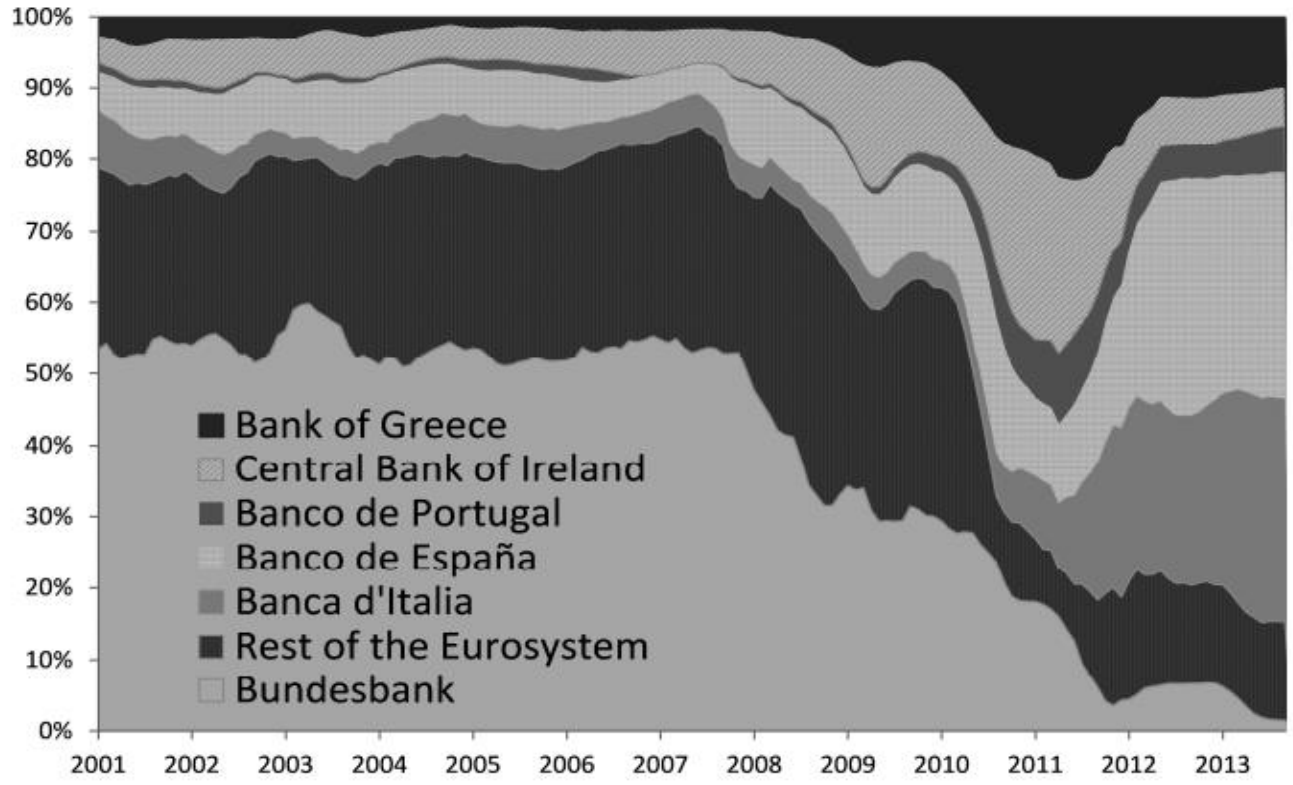
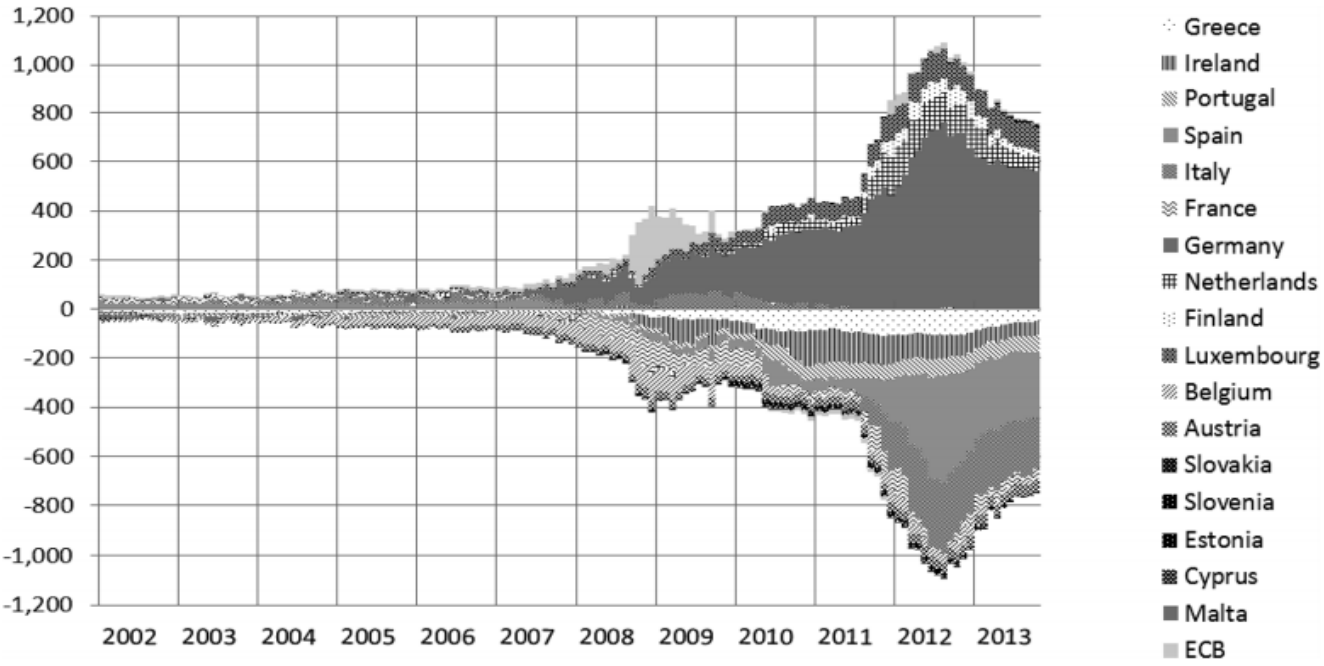


Figure 10
Liqudity and redistribution (Cour-Thimann, 2013)



Notes: Last observation: end-October 2013. A positive (negative) sign reflects a net claim (liability) of the NCB *vis-à-vis* the ECB in the Target payment system.

Figure 11
Target balances of the euro area central banks (Cour-Thimann, 2013)

The argument that the ECB policies distributed risk from south to north is being refuted by many economists. When considering that the risk has originated when investors from the core economies invested in the peripheral ones. As the economic crisis progressed, investors wanted to reduce the risk and send the money back. Without a common currency, a devaluation force would have hit those funds. However, as they are in the same currency area, the euro system done what it's supposed to do and stabilized the economy and shifted the risk to its own balance sheet in order to provide liquidity (Nayak, 2013).

According to The vice president of the ECB, Mr Constâncio, in order to have a successful monetary union like the US, It is essential to have a high degree of risk sharing among the currency area members through income and consumption smoothing. The monetary policy cannot be effective in a fragmented area with one economy is in a boom and another in a recession. Therefore, it is important to smooth income and consumption shocks across the EU. Data from the US indicates that 75% of income and consumption shocks are smoothed across different states. This is done mainly by the market transactions and tax Transfers. Meanwhile, the euro area Have no system of transfers and comparatively less developed and integrated financial market. Risk sharing in the EU was estimated to be 57% after the introduction of the common currency. However, after 2008 risk sharing declined. One of the initiatives to increase bridge sharing is the common market Union Action plan, which was introduced in February 2015 to make the European economy less reliant on banks to finance its investments (European Commission, 2015).

5. Conclusion

As the normal transmission channels of liquidity were and still largely impaired, CB's had to come up with new ways to conducts its monetary operation. Central banks had to conduct unconventional monetary policy in order to reduce interest rates and prevent deflation. By conducting quantitative easing, central banks obtained new transmission channels to affect interest rates and inflation. By increasing the monetary basis, central banks could influence the market through signalling portfolio rebalancing, liquidity, and confidence channels.

In the US and the EU, quantitative easing was successful to maintain price stability by avoiding a deflationary pressure. Moreover, there are no indication that quantitative easing increases the risk of a high inflation in the medium and the long term. Core inflation expectations in the US and EU was and still around the target rate of 2%. The behaviour of

inflation in the past few years may indicate that the old models that protect information are not as good in predicting the current inflation trends as they used to be. That could be due to a structural change in labor wages.

Enough data links quantitative easing in the US with low unemployment rate and increase in investments. However, in the EU, quantitative easing data was inconclusive when it comes to unemployment and investments. As QE in the EU reduced short-term interest rates, it also increased the long term once, which could hurt investment opportunities.

Unconventional monetary policy has a distributional impact on income wealth and risks. Its increases the wealth of asset holders, therefore, increases wealth inequality. Moreover, quantitative easing gave an unprecedented insurance to the financial industry, which made the value of the financial sector as a percent of GDP reaches a record high.

Monetary policy in the EU redistributes the risk between members as it conducts its open market operations and injects liquidity into troubled economies. In addition, in order to increase the efficiency of the monetary policy, it is important to have a more integrated stock market.

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